

WEDGE-TAILED EAGLE TERRITORIES IN THE BENDIGO AREA - SUMMARY OF SURVEY DATA 2011/2014

TERRITORY		Active?	Nest Used *	Tree Species	Height of nest	Aspect	Date 1st egg laid	No. Of chicks	Date of 1st Fledging
MOUNT ALEXANDER TERRITORIES									
Mt Alexander East	2011	✓	1	MG	13 M	E	Aug 8	2	Dec 1
	2012	✓	2	MG	15 M	E	Sep 1	1	Dec 25
	2013	✓	3	MG	12 M	E	Aug 15	2	Dec 10
	2014	✓	3	MG	12 M	E	Aug 10	2	Dec 5
Mt Alexander North	2011	✓	1	MG	15 M	W	July 15	2	Nov 10
	2012	✓	2	YB	13 M	E	Aug 5	2	Nov 30
	2013	✓	1	MG	15 M	W	July 10	2	Nov 5
	2014	✓	1	MG	15 M	W	July 10	2	Nov 5
Mt Alexander West	2012	✓	1	MG	12 M	E	July 20	1	Nov 15
	2013	✓	1	MG	12 M	E	Aug 10	1	Dec 5
RAVENSWOOD TERRITORIES									
Ravenswood East	2012	✓	1	YB	8 M	W	Aug 15	1	Dec 10
	2013	✓	1	YB	8 M	W	?		Abandoned
	2014	✓	1	YB	8 M	W	Aug 15	1	Dec 15
Ravenswood South	2012	✓	1	LLB	12 M	NE	July 10	1	Nov 5
	2013	✓	1	LLB	12 M	NE	July 10	2	Nov 5
	2014	✓	1	LLB	12 M	NE	July 10	2	Nov 5
Ravenswood West	2012	✓	1	GB	10 M	N	July 15	2	Nov 10
	2013	✓	1	GB	10 M	N	July 20	2	Nov 15
	2014	✓	1	GB	10 M	N	July 25	2	Nov 20
BIG HILL RANGE TERRITORIES									
Big Hill East	2012	✓	1	YB	12 M	N	Aug 1	1	Nov 25
	2013	✓	1	YB	12 M	N	Aug 1	1	Tree fell
Big Hill Central	2013	✓	1	GB	12 M	S	June 30	1	Oct 25
	2014	✓	2	GB	9 M	N	June 15	1	Oct 10
Big Hill West	2013	✓	1	GB	15 M	NW	Sept 10	1	Dec 25
SEDGWICK									
Sedgwick South	2012	✓	1	GB	13 M	W	June 25	1	Oct 20
Sedgwick East	2013	✓	1	RRG	15 M	E	?		Abandoned
MALDON									
Maldon West	2012	✓	1	GB	12 M	NW	Aug 15	2	Dec 10
	2013	✓	1	GB	12 M	NW	Aug 5	1	Nov 30
	2014	✓	2	GB	12 M	SE	Early Sept		Abandoned
Maldon North	2013	✓	1	GB	12 M	E	Aug 15	1	Dec 10
OTHER TERRITORIES									
Mandurang	2012	✓	1	RRG	15 M	S	?		Nest fell
	2013	✓	2	RI	8 M	S	July 5	2	Oct 31
	2014	✓	1	RRG	15 M	S	Aug 20	2	Nov 25
Girvan's Hill	2012	✓	1	RRG	12 M	S	Aug 5	2	Nov 30
Shelbourne	2012	✓	1	GB	20 M	SE	Aug 25	2	Dec 20
	2013	✓	2	GB	15 M	SE	Aug 1	2	Nov 25
	2014	✓	1	GB	20 M	SE	Aug 1	1	Nov 25

NESTING DATA 2011-2014 (Continued)

TERRITORY		Active?	Nest Used *	Tree species	Height of nest	Aspect	Date 1 st egg laid	No. Of chicks	Date of 1 st Fledging
OTHER TERRITORIES									
Huntly North	2012	✓	1	GB	15 M	N/A	July 15	1	Nov 7
	2013	✓	1	GB	15 M	N/A	July 15	1	Nov 7
	2014	✓	1	GB	15 M	N/A	June 30	1	Oct 25
Sunday Morning Hills	2013	✓	1	GB	13 M	NW	Aug 1	2	Nov 25
	2014	✓	1	GB	13 M	NW	Aug 10	2	Dec 5
Inglewood	2013	✓	1	GB	12 M	SE	July 25	1	Nov 20
Pastoria	2013	✓	1	GB	10 M	NW	Aug 20	2	Dec 15

EXPLANATIONS

Nest used – Indicates whether a different nest is used each year, and also whether a nest is used in more than one year of the survey period. Nests are numbered 1 to 4, representing the number of nests in the territory.

Tree Species Codes used are:

RRG	River Red Gum	MG	Manna Gum
YB	Yellow Box	LLB	Long-leaved Box
GB	Grey Box	RI	Red Ironbark

Dates – Egg laying/Fledging

These dates are accurate to within a few days.
Although I was not able to confirm that all chicks fledged successfully, I visited the nests as often as possible and have no reason to believe that fledging didn’t eventuate.

SUMMARY – NESTING DATA

Breeding success

- I commenced my survey late in the 2011 nesting season and was therefore able to collect limited data only for that year. The two nests that I observed each successfully reared two chicks.
- During the 2012 season I observed 13 active nests. Five of these nests produced two chicks, seven produced one chick and one nest was abandoned when it was blown out of the tree.
- In 2013 I observed 18 active nests – eight produced two chicks, eight produced one chick and two nests were abandoned.
- In 2014 I reduced my search area and observed 11 active nests, of which six produced two chicks, four produced one chick and one nest was abandoned.
- Disappointingly, five of the territories that were active in 2013 were not active in 2014.
- The size of each territory in the region has been stable over the study period. It is believed that the size of a territory is related to the amount of food/prey required to breed. As the following table shows, the most successful territories over the study period (as evidenced by the number of chicks reared per territory) were those in the Mount Alexander and Ravenswood districts.

Number of Chicks Reared

Territories	2011*	2012	2013	2014	TOTAL	Chicks per Territory
Mt Alexander territories (3)	4	4	5	4	17	5.7
Ravenswood territories (3)		4	4	5	13	4.3
Big Hill Range territories (3)		1	3	1	5	1.7
Sedgwick territories (2)		1			1	0.5
Maldon territories (2)		2	2		4	2.0
Other territories (7)		5	10	6	21	3.0
Total	4	17	24	16	61	3.1

* indicates limited research data

The breeding success in the Mount Alexander and Ravenswood territories is a reflection of the large populations of rabbits in these areas during the study period.

- 40 nests had successful breeding outcomes over the study period. The average number of chicks reared per successful nest over the study period was 1.53.
- The proportion of successful nests with two chicks was as follows:

Mount Alexander territories	70%
Ravenswood territories	63%
Big Hill Range territories	0%
Sedgwick territories	0%
Maldon territories	33%
Other territories	62%
All territories	53%

Nest characteristics

- The following table lists the number of active nests in different tree species over the study period.

Tree Species	Number	% of Total
Grey Box	14	52
Manna Gum	5	18
River Red Gum	3	11
Yellow Box	3	11
Long-leaved Box	1	4
Red Ironbark	1	4
Total	27	100

The tree species used were normally the dominant species in that area.

There were no active nests in dead trees.

- The average nest height was 12.7 metres, which was an average of 64% of the tree height.
- 70% of active nests observed were located on private land.
- Only 10% of the nests used were built (new) during the study period.
- Over the three-year period from 2012 to 2014, a total of 26 different nests were occupied.

14 of these nests were only used once
8 were used twice
4 nests were used in all three years.

Observations made during study period

<u>Nest location/selection</u> • Preference for sloping sites – Bendigo area has many, with a soil structure that supports large trees. • Preference for east- and south-facing hillsides (confirmed in survey by Foster & Wallis, 2008) • Nests are normally located at more than 50% of slope height. • Usually more than 1 nest in each territory – as many as 4. • Eagles normally choose a different nest each year – risk of parasite infestation. • To protect against parasites, eagles sanitise the nest by regularly adding green leaves. • The nesting season is a time when eagles reveal their individual personalities. Some birds are more sensitive around the nest; others seem to become accustomed to human presence. (Confirmed in a 2007 field survey by Debus, Hatfield, Ley & Rose – some birds become less sensitive to individual humans and vehicles.)
Pre-nesting behaviour and incubation: • Pre-nesting activities begin in May with spectacular display flights (Mt Moliagul is an ideal vantage point). • Incubation starts in the Bendigo area from early July/Mid Aug. • In July/August the sight of a lone male eagle is a sign that female is on a nest. • Incubation takes up to 45 days – eggs laid 3-4 days apart.
Eagle nest behaviour: • After chicks hatch – there is a marked increase in nest activity. • Frequent visits by adults in early stages, tapering as chicks mature. • Chicks initially fed by adults, then later food is left and chicks feed themselves . • When adult male arrives in nest vicinity – telltale noise from other birds (Magpies, Ravens, Cockatoos), and calling (yelping) by adult. • Fledging takes about 75 days – chicks at their most resplendent at this point (Burnt Orange, lighter shades of Brown. • Colouring – darker brown after 3/4 years, black after another 3/4 years. • After fledging, chicks are dependent for 5/6 months – then the most dangerous year of their lives begins (lack of hunting experience, dependence on carrion, collision with vehicles.

PROTOCOLS USED

Wedge-tailed Eagles are highly intelligent, often extremely sensitive birds. To observe and photograph these beautiful creatures requires much dedication and patience, together with an understanding of sensible protocols. I always adhere to the following protocols in the hope of avoiding nest abandonment, which would be a very sad outcome.

- During the nest building/refurbishment period (around May/June), the incubation period (from June/July to September) and up to the stage where the chicks are about two weeks old I am careful not to venture into the vicinity of the active nest. Brief observations are made from a distance, using binoculars or a telescope.
- Subsequent observations are made from a carefully concealed hide, no closer than 30 metres from the nest. The hide is always erected quickly and then left in position for a few days before its use.
- Each time I use a hide I try to arrange for a second person to 'walk in' with me and then leave soon after I enter the hide. This practice is designed to minimise any anxiety experienced by the birds.
- When in the hide I limit any noise and movement, in the knowledge that eagles are very sensitive to human presence.
- When leaving the hide, I do so when the adult eagles are away from the nest, and I then leave the area quietly and calmly.
- To minimise the level of disturbance to the birds, I try to leave a two-to-three day gap between visits.
- Another very important protocol I am aware of is the need to obtain land-owner permission before entering privately-owned land. This is a particularly important issue to me as the majority of Wedge-tailed Eagle territories in central Victoria are on private land. I was able to establish and maintain excellent rapport with land-owners by sharing information and photographs with them.

DARYL FLEAY, 2015